



SuperStack® 3

Server Load Balancer

Server Load Balancer Plus

Release Notes

3C16120

3C16121

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Conserving energy, materials and natural resources in all operations.

Reducing the waste generated by all operations. Ensuring that all waste conforms to recognized environmental standards. Maximizing the recyclable and reusable content of all products.

Ensuring that all products can be recycled, reused and disposed of safely.

Ensuring that all products are labelled according to recognized environmental standards.

Improving our environmental record on a continual basis.

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Regulated Materials Statement

3Com products do not contain any hazardous or ozone-depleting material.

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RELEASE NOTE INFORMATION

Overview

These release notes cover the Server Load Balancer (3C16120) and the Server Load Balancer Plus (3C16121).

Before using your Server Load Balancer and Server Load Balancer Plus, please read this document in its entirety. It contains important information about the product and the software.

3Com provides easy access to technical support information through a variety of services. See Technical Support on page 1.

Information contained in the Technical Support section is correct at time of publication. For the most recent information, 3Com recommends that you access the 3Com Corporation World Wide Web site. See Online Technical Services on page 1.

For specific information on installing and configuring the Server Load Balancer or the Server Load Balancer Plus, refer to the *Server Load Balancer and Server Load Balancer Plus User Guide* for information.

Product Prerequisites

The Server Load Balancer and Server Load Balancer Plus require the following:

- Any Pentium or newer processor. 3Com recommends using a Pentium processor of 350 MHz or greater.
- Microsoft Windows 95/98, Windows NT 4.0, or Windows 2000.
- Web browser, such as Netscape Navigator® version 4.5 or above or Microsoft® Internet Explorer, version 5.0 or above.
- Java Runtime Environment Version 1.3 (for updated Web browser plug-ins).

A version of the Java Runtime Environment (JRE) plug-in for Windows® is provided on the Server Load Balancer and Server Load

Balancer Plus. If the JRE program is missing, you will be prompted to install it. See the *Server Load Balancer and Server Load Balancer Plus User Guide* for information.

For an up to date list of supported operating systems and browser releases, refer to the 3Com Web site at <http://www.3Com.com>. Click **Support for Products** for more information.

Web Browser Requirements

The Web Interface requires a Web browser such as Netscape Navigator® version 4.5 or above or Microsoft® Internet Explorer, version 5.0 or above.



Netscape version 4.77 is not supported at this time.

If you do not have a Web browser installed, you must do so before installing and configuring the Server Load Balancer and Server Load Balancer Plus. For more information on Netscape or Microsoft Internet Explorer, refer to the manufacturer's Web sites located at: <http://www.microsoft.com> or <http://www.netscape.com>.

Solaris and Linux Operating Systems

For information on Solaris™ and Linux™ operating systems go to the following URL:

<http://support.3com.com/infodeli/tools/switches/ss3/family.htm>

Reset To Factory Defaults

You should be careful when returning the Server Load Balancer and Server Load Balancer Plus in a redundant configuration back to factory defaults. In a redundant configuration, topological loops are inherent in the deployment.

Special consideration of the attachment of servers using L2 devices to the Server Load Balancer and Server Load Balancer Plus should be made to remove links that create loops among the devices.

When configuring for redundant operation, avoid loops until the configuration is complete.

Configuration Issues

The following are issues related to the configuration of the Server Load Balancer and Server Load Balancer Plus.

Changing Password

The Server Load Balancer and Server Load Balancer Plus provide two levels of access, admin and monitor. The password field contains blank default login passwords. The two levels of access are:

- admin — the user can access and change all manageable parameters
- monitor — the user can view all manageable parameters, but cannot change any parameters

The Server Load Balancer does not provide a way to recover a lost password. If you choose to assign a new password, it is suggested you keep note of it in a safe place. If you forget your password, you will be locked out of the unit. If you change the password during the CLI Server Load Balancer setup, this is the password you should use, and not the blank default login password.

Committing Configurations

Configuration changes performed on either the Server Load Balancer or the Server Load Balancer Plus are committed to the configuration file after a 15 second delay. You should wait at least 30 seconds before rebooting the Server Load Balancer and Server Load Balancer Plus.

The configuration file represents the current operating configuration and can be downloaded by entering the following address into the your management browser's address field, assuming the address of the Server Load Balancer and Server Load Balancer Plus IP is 1.2.3.4):

`http://1.2.3.4/config/current.slb`



It is strongly suggested that the configuration file be downloaded and made available to 3COM Technical Support for the resolution of issues relating to the Server Load Balancer and Server Load Balancer Plus.

Resetting Unit Settings

You can reset the Server Load Balancer's settings using the Web Interface or CLI. The following describes what happens in a non-redundant and redundant configuration:

Non-Redundant Configuration

In a non-redundant configuration the primary IP address, subnet mask and default router settings are preserved.

Redundant Configuration

When resetting Device A, the primary IP addresses (for both Device A & Device B), the subnet mask and the default router settings are preserved.

The device redundancy setting is set to none and Device B synchronizes to this configuration setting. When Device B discovers that it is no longer part of a redundant configuration, all of the settings are reset to factory defaults including the primary IP address, subnet mask and default router.



In redundant configurations, resetting Device B's configuration is not recommended as Device A is unaffected and Device B becomes unreachable due to the loss of its primary IP address.

Clock Settings

When Device A is configured, it does not pass the configuration for **set clock** to Device B. You must set the clock on Device B using the CLI.

Redundant Configuration Issues

The following are known issues that pertain to the Server Load Balancer and the Server Load Balancer Plus when configuration for redundancy.

The Server Load Balancer and Server Load Balancer Plus support the following redundant configurations:

- Active-Passive
- Active-Active

Virtual Router Redundancy Protocol Priority Generation

The Server Load Balancer and Server Load Balancer Plus use the Virtual Router Redundancy Protocol (VRRP) to determine which devices should be in Active or Standby modes.

The message log, as shown below, for the Server Load Balancer and Server Load Balancer Plus contains entries that dynamically describe the state and operation of the redundant configurations.

```
2001-01-01 12:00:00 INFO <Ext.Prot.Vrrp> VRID 1: Priority: 40 Changing to Priority: 41
```

The dynamic update of the priority field is an indication of the process that the Server Load Balancer and Server Load Balancer Plus continuously performs to determine its overall network connectivity. In comparing this priority field with its peer's, the unit with the greatest network connectivity value is deemed the Active device.

Table 1 depicts the contributing values used for the various network connectivity components monitored by the Server Load Balancer and Server Load Balancer Plus:

Table 1 Contributing Values of Monitored Components

Source	Meaning	Contribution
Client Role Port	One or more ports with client access role in the forwarding state	10 points
Server Role Port	One or more ports with server access role in the forwarding state	10 points
Default Router	The default router is determined to be reachable via a ping check	15 points
Server Assignment	The server associated to a service assignment is determined to be reachable via a Balance Specification health check	1 point per server assignment Note: A server may be assigned to more than one service and will contribute 1 point per assignment
Active Redundancy Designation	The Server Load Balancer has been designated as the primary device in the redundant configuration.	5 points

In the example message log line shown under *Virtual Router Redundancy Protocol Priority Generation* on *page 8*, the priority value derived is defined as follows:

Client Role Ports Reachable	10
Server Role Ports Reachable	10
Default Router Reachable	15
Active Designation	5
Original priority:	40
Server Assignment	1
Revised priority:	41

Preventing VRID Collisions

The VRRP protocol requires a unique identifier be used for each redundant device configuration. The Server Load Balancer and Server Load Balancer Plus defaults the VRID field to the values of 1 and 2.

In some cases, these identifiers could collide with either another Server Load Balancer and Server Load Balancer Plus or with other network devices that are taking part in the VRRP protocol.

As a result, it may be necessary to override the VRIDs used by the Server Load Balancer and Server Load Balancer Plus. To override these values, you must be at the *Logical View* and complete the following:

- 1 Select *Server Load Balancing > Redundancy Setting* from the Navigation tree. The *Redundancy Settings* page is displayed.
- 2 Enter an identifier with a value between 1 and 255.

See the *Server Load Balancer and Server Load Balancer Plus User Guide* for information.

Restricted Management Topology

In a redundant configuration, the Server Load Balancer and Server Load Balancer Plus automatically detect and learn about the peer device (a Server Load Balancer or Server Load Balancer Plus) that it is associated with.

To properly handle management traffic associated with the peer device, the Server Load Balancer and Server Load Balancer Plus dynamically create certain forwarding filters. As a result, a client directly connected to a Server Load Balancer or Server Load Balancer Plus are not be able to manage the peer Server Load Balancer and Server Load Balancer Plus through the device that it is attached to.

To ensure that management traffic to the Server Load Balancer or Server Load Balancer Plus works properly in a redundant configuration, the client station should be attached via a L2 device that connects both Server Load Balancer and Server Load Balancer Plus's together.

Changing Redundancy Types

The Server Load Balancer and Server Load Balancer Plus must be reset to a factory configuration when changing the redundancy types selected.

For example, if the Server Load Balancer or Server Load Balancer Plus has been configured for Active-Passive operation and you want to change to and Active-Active configuration, the Server Load Balancer or Server Load Balancer Plus must be reset to factory defaults and the setup wizards must be re-run in order to select the Active-Active mode.

System Clock

The time settings may get lost when power is removed from the device for durations greater than 30 days. Following an initial installation or whenever power is removed from the device for an extended period of time, it is recommended that the time setting be verified.

The time setting can be viewed using the **show clock** command in the CLI. If the time is not accurate, the proper time setting can be defined using the **set clock** command.

Service Access Permissions

The *Logical View* allows permissions between a User group and a Service definition to be individually allowed or denied. When the service access permissions are changed, it will take 15 seconds for this change in policy to take effect.

The policy change only applies to connections initiated after the access permissions are changed. That is, connections currently established to the application service are not affected when the permissions are altered.

Balance Profile Configuration

You cannot change a balance profile health check while the health check is assigned to a service although the Web interface allows you to attempt this.

The definition of a *Logical View > Balance Specification* requires that a health check type be selected. The Web interface currently allows an attempt to modify the health check type for an existing Balance Specification. This operation is prevented by the operational firmware with the following indication:

Error: The Health check type cannot be changed for an existing Balance Profile

In order to change the health check type for a service, you must:

- 1 Unassign the servers using *Server Assignments*.
- 2 Create a new balance profile specification and select a different health check type. Y
- 3 Apply the new specification to the desired application service.
- 4 Reassign the servers using *Server Assignments*.

See the *Server Load Balancer and Server Load Balancer Plus User Guide* for information.

Server Network Address Translation

The Server Load Balancer and Server Load Balancer Plus allows for a network address to be specified for translation when a server initiates a connection to the external network. The intent of this feature is to allow application servers to retrieve content from external locations of the network that they are connected to.

This feature supports the following protocols:

- DNS
- FTP
- HTTP
- ICMP PING.
- TELNET

The NAT feature does not meet the requirements of a full application level gateway implementing network address translation. Additional protocols may work correctly but any protocols that negotiate dynamic ports do not work (i.e. RTSP, H323, SIP, etc.).

Dynamic Port Range

If NAT is configured for operation on a Server Load Balancer and Server Load Balancer Plus, the application services should not be defined using port numbers that overlay the dynamic port range that includes ports 49152 through 57343. These port ranges are used by the NAT function of the Server Load Balancer and Server Load Balancer Plus and potential port collisions may affect the proper operation of the application service or the address translation function.

Software Upgrades

The following section describes known issues related to performing software upgrades.

TFTP Server Timeouts

For the purpose of upgrading operational firmware, the TFTP protocol is used by the Server Load Balancer and Server Load Balancer Plus to connect to servers. The Server Load Balancer and Server Load Balancer Plus makes multiple attempts to upgrade using the designated TFTP server.

Table 2 describes the backoff delay times for each retry:

Table 2 Retry and Backoff Time

Retry	Backoff Delay
Initial Attempt	N/A
First	8 seconds
Second	16 seconds
Third	32 seconds
Fourth	1 minute
Fifth	1 minute
Final	1 minute

Once the Server Load Balancer and Server Load Balancer Plus have backed off the timeout, it will never go back down again. For example, if a packet is dropped it may go from a time out of 8 to 16 seconds and remains at a 16 second timeout as long as packets continue to be received. The retry count resets to indicate an initial attempt. The upgrade terminates on its own, in the worse case 6 minutes if no TFTP server is responding.

If an upgrade is initiated and then subsequently canceled, you must wait at least 1 minute before initiating a subsequent upgrade.

- Disable Attack Filters

To ensure that the software upgrade sequence completes successfully, all Attack Filters should be disabled for the duration of the upgrade. The Attack Filters should be re-enabled once the upgrade completes.
- Restart the Browser

The browser must be restarted after an upgrade is performed.



TECHNICAL SUPPORT

3Com provides easy access to technical support information through a variety of services. This section describes these services.

Information contained in this section is correct at time of publication. For the most recent information, 3Com recommends that you access the 3Com Corporation World Wide Web site.

Online Technical Services

3Com offers worldwide product support 24 hours a day, 7 days a week, through the following online systems:

- World Wide Web site
- 3Com Knowledgebase Web Services
- 3Com FTP site

World Wide Web Site

To access the latest networking information on the 3Com Corporation World Wide Web site, enter this URL into your Internet browser:

<http://www.3com.com/>

This service provides access to online support information such as technical documentation and software, as well as support options that range from technical education to maintenance and professional services.

3Com Knowledgebase Web Services

This interactive tool contains technical product information compiled by 3Com expert technical engineers around the globe. Located on the World Wide Web at **<http://knowledgebase.3com.com>**, this service gives all 3Com customers and partners complementary, round-the-clock access to technical information on most 3Com products.

3Com FTP Site

Download drivers, patches, software, and MIBs across the Internet from the 3Com public FTP site. This service is available 24 hours a day, 7 days a week.

To connect to the 3Com FTP site, enter the following information into your FTP client:

- Hostname: **ftp.3com.com**
- Username: **anonymous**
- Password: **<your Internet e-mail address>**



You do not need a user name and password with Web browser software such as Netscape Navigator and Internet Explorer.

Support from Your Network Supplier

If you require additional assistance, contact your network supplier. Many suppliers are authorized 3Com service partners who are qualified to provide a variety of services, including network planning, installation, hardware maintenance, application training, and support services.

When you contact your network supplier for assistance, have the following information ready:

- Product model name, part number, and serial number
- A list of system hardware and software, including revision levels
- Diagnostic error messages
- Details about recent configuration changes, if applicable

If you are unable to contact your network supplier, see the following section on how to contact 3Com.

Support from 3Com

If you are unable to obtain assistance from the 3Com online technical resources or from your network supplier, 3Com offers technical telephone support services. To find out more about your support options, call the 3Com technical telephone support phone number at the location nearest you.

When you contact 3Com for assistance, have the following information ready:

- Product model name, part number, and serial number

- A list of system hardware and software, including revision levels
- Diagnostic error messages
- Details about recent configuration changes, if applicable

Here is a list of worldwide technical telephone support numbers. These numbers are correct at the time of publication. Refer to the 3Com Web site for updated information.

Table 1 Support Numbers

Country	Telephone Number	Country	Telephone Number
Asia, Pacific Rim			
Australia	1 800 678 515	P.R. of China	10800 61 00137 or
Hong Kong	800 933 486		021 6350 1590 or
India	+61 2 9937 5085 or		00800 0638 3266
	000800 6501111	Singapore	800 6161 463
Indonesia	001 800 61 009	S. Korea	00798 611 2230 or
Japan	03 5783 1270		02 3455 6455
Malaysia	1800 801 777	Taiwan, R.O.C.	00798 611 2230
New Zealand	0800 446 398	Thailand	0080 611 261
Pakistan	+61 2 9937 5083		001 800 611 2000
Philippines	1235 61 266 2602		
Europe, Middle East and Africa			
From anywhere in these regions, call:	+44 (0)1442 435529 phone +44 (0)1442 436722 fax		
Europe and South Africa			
From the following countries, you may use the toll-free numbers:			
Austria	0800 297468	Luxembourg	0800 3625
Belgium	0800 71429	Netherlands	0800 0227788
Denmark	800 17309	Norway	800 11376
Finland	0800 113153	Poland	00800 3111206
France	0800 917959	Portugal	0800 831416
Germany	0800 1821502	South Africa	0800 995014
Hungary	06800 12813	Spain	900 983125
Ireland	1800 553117	Sweden	020 795482
Israel	1800 9453794	Switzerland	0800 55 3072
Italy	800 8 79489	U.K.	0800 966197
Latin America			
Brazil	0800 13 3266	Puerto Rico	800 666 5065
Mexico	01 800 849CARE	Central and South America	AT&T +800 998 2112
North America			
	1 800 NET 3Com (1 800 638 3266)		
	Enterprise Customers: 1 800 876-3266		

Returning Products for Repair

Before you send a product directly to 3Com for repair, you must first obtain an authorization number. Products sent to 3Com without authorization numbers will be returned to the sender unopened, at the sender's expense. To obtain an authorization number, call or fax:

Table 2 Numbers to Call for Authorization

Country	Telephone Number	Fax Number
Asia, Pacific Rim	+ 65 543 6500	+ 65 543 6348
Europe, South Africa, and Middle East	+44 (0)1442 435529	+ 44 (0)1442 436722
Central and South America	525 201 0075	
Argentina	0810 222 3266	
Bolivia	511 241 1691	
Brazil	0800 133266 or 55 11 5643 2700	
Caribbean	525 201 0004	
Chile	562 240 6200	
Colombia	525 201 0004	
Ecuador	525 201 0004	
Mexico	525 201 0004	
Paraguay	525 201 0004	
Peru	511 241 1691	
Uruguay	525 201 0004	
Venezuela	525 201 0004	

From the following countries, you may call the toll-free numbers; select option 2 and then option 2:

Austria	0800 297468
Belgium	0800 71429
Denmark	800 17309
Finland	0800 113153
France	0800 917959
Germany	0800 1821502
Hungary	00800 12813
Ireland	1800553117
Israel	1800 9453794
Italy	1678 79489
Netherlands	0800 0227788
Norway	800 11376
Poland	00800 3111206
Portugal	0800 831416
South Africa	0800 995014
Spain	900 983125
Sweden	020 795482
Switzerland	0800 55 3072
U.K.	0800 966197

Table 2 Numbers to Call for Authorization

Country	Telephone Number	Fax Number
U.S.A. and Canada	1 800 NET 3Com (1 800 638 3266) Enterprise Customers: 1 800 876 3266	1 408 326 7120 (not toll-free)

